



Automatic Recognition of Noun-Noun-Relations via WordNet

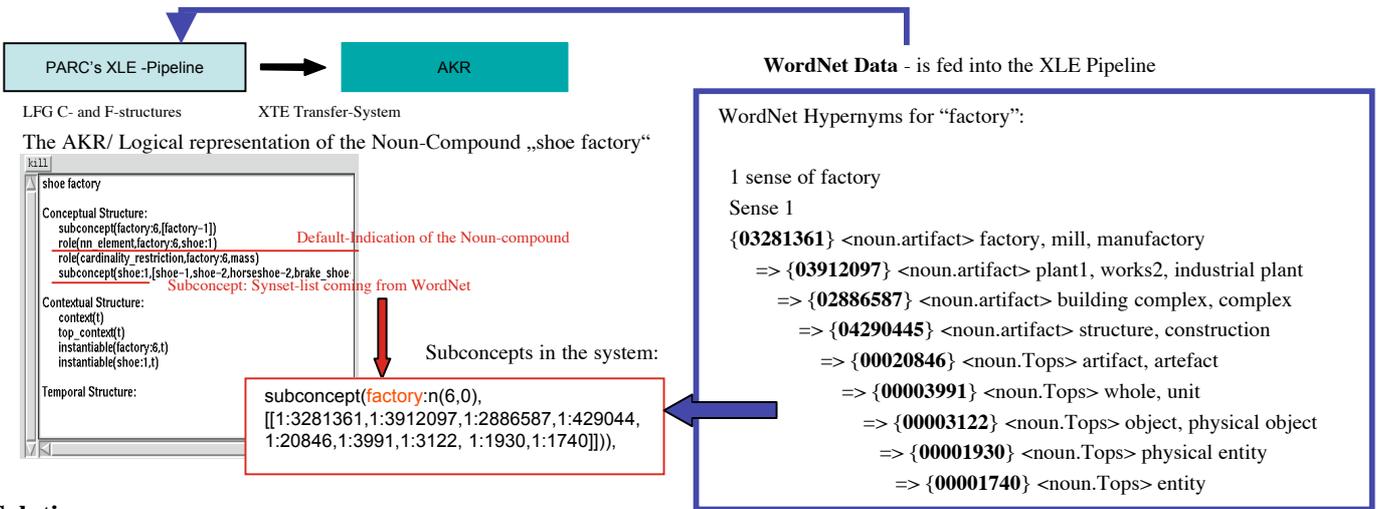
WELL-KNOWN PROBLEM: The single elements of Noun-compounds form relations to each other, which are difficult to predict, e.g.

- Butter knife → knife that is **used to** spread butter
- Steel knife → knife that is **made of** steel
- Pocket knife → knife **for** the pocket

Even though the head noun is the same
a change in the modifying noun
changes the relation within the compound

TASK: Find a way to automatically recognize the relation within compounds so it can be described within PARC's AKR

PARC's XLE (grammar development platform) and AKR (Abstract Knowledge Representation) (http://www.parc.com/ist1/groups/nlt1/xle/xle_toc.html)



Solution:

- 1) Abstract Noun-groups like „artifact“ can be constructed with the help of WordNet Hypernyms. Nouns sharing certain Hypernym number can thus be recognized as a member of an abstract group.

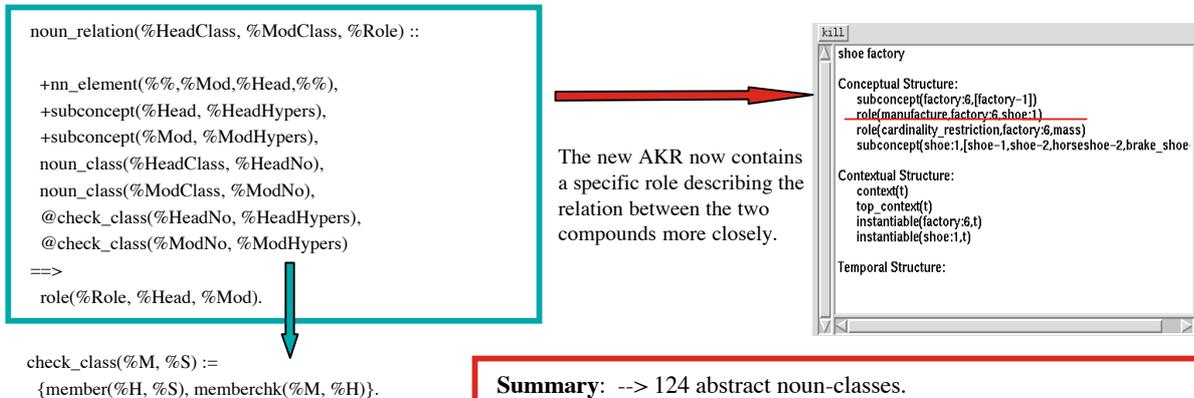
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| - noun_class(artifact, 00020846).    "shoe", "factory"
| - noun_class(manufactory, 03912097). "factory"
  
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- 2) By defining the relations between different groups of nouns, the relations within Noun-compounds can be described automatically.

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@noun_relation(manufactory, artifact, manufacture).
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- 3) Rule (XTE) that tests all the parameters of the relation and, in case of a positive match, assigns a specific role.



Summary: --> 124 abstract noun-classes.
--> 115 specific relations to describe the relationship between two nouns.
--> 23 different roles to describe these relations.
--> 1 default-of-role for non-specific relations not covered by the above.

Positive Result: Most of the Noun compounds can be described with this solution,
Extensions: Pertainyms